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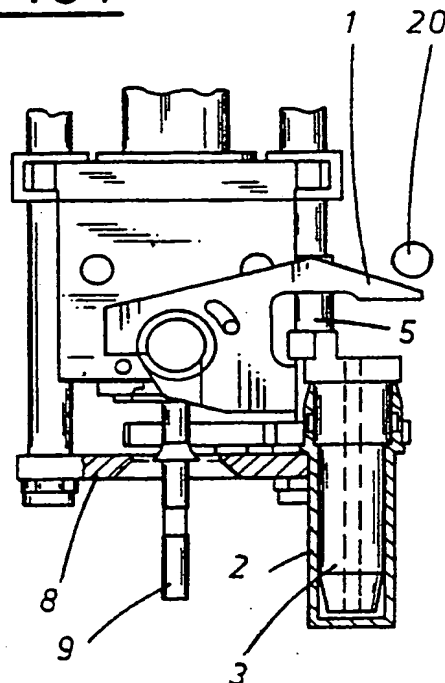
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(54) A filter valve for bottling equipment, incorporating means of support for a dummy bottle.

(57) The art field is that of bottling equipment, and more especially, filling machinery in which each valve is fitted permanently with a dummy bottle (2) that can be positioned under the filler outlet (9) for the purposes of sanitization, a periodic operation consisting in successive flushing cycles designed to cleanse all such internal spaces and external parts of the valve as come into contact with the bottled product, in the interests of hygiene; the flushing liquid generally used is water and soda.

**FIG1**



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The present invention relates to a filler valve for bottling machinery, incorporating means by which to support a dummy bottle.

The prior art embraces bottle filling machines in which periodic sanitization, that is, a hygienic cleansing operation effected by repeated flushing of the filler valves and all the relative internal chambers and external parts that come into contact with the product, using water and water with soda at high temperature, involves positioning a test or dummy bottle under each valve by hand; the purpose of the dummy is to collect the flushing liquids and to simulate a production bottle, enabling execution of the various steps of the normal filling cycle. An automatic filling system also exists, whereby dummy bottles are positioned beneath the filler valves utilizing a star wheel and a belt conveyor, though the dummies still require loading initially, and removing once the sanitization procedure has been completed.

Conventional systems thus betray the drawback that each cleansing operation dictates the loss of a certain amount of time in arranging and removing dummy bottles respectively in preparation for and on completion of the sanitizing cycle.

The object of the present invention is to overcome the drawback mentioned above, and in particular, when sanitization of the bottling equipment is due, to allow of positioning dummy bottles automatically under the filler valves and, on completion of the sanitizing cycle, of automatically retracting the bottles, which are associated permanently with the valve by way of support means, and returning them to a stowed position.

The stated object is comprehensively realized by adoption of a filler valve for bottling equipment according to the present invention; such a valve is of the type incorporating means of support for a dummy bottle and comprising a frame, associated with and axially slidable in relation to the body of the valve and designed to raise a bottle toward the valve outlet by way of a hook element, and is characterized in that it incorporates both the means by which to support a dummy bottle, and the dummy bottle itself.

The invention will now be described in detail, by way of example, with the aid of the accompanying drawings, in which:

- fig 1 is a frontal elevation of the filler valve body, which shows the dummy bottle in its stowed position, permanently associated with the valve;
- fig 2 shows the filler valve body from above, in the situation of fig 1;
- fig 3 is a frontal elevation of the filler valve body, showing the dummy bottle released from the stowed position and lowered along the direc-

tion of its own axis;

-fig 4 shows the filler valve body from above, in the situation of fig 3;

-fig 5 is, a frontal elevation of the filler valve body, showing the dummy bottle positioned beneath and coaxial with the valve outlet;

-fig 6 shows the situation of fig 5 in a view from above;

-fig 7 is a frontal elevation of the filler valve body, showing the dummy bottle in its operative position during the sanitizing cycle, raised up against valve;

-fig 8 shows the situation of fig 7 in a view from above.

With reference to the drawings, 1 denotes a cam plate operated by a shoe 20, the movement of which releases a dummy bottle 2 from its stowed position, stationed over a cylinder 3 integral with the body of the filler valve.

The cylinder 3 exhibits two sections of dissimilar diameter in order to enable its adaptation to the shape of the dummy bottle, and at the same provide a stoppering and protective element for the bottle. 10 denotes a hole in the cylinder, through which a tube 11 can be inserted to the end of blowing the dummy bottle clear of residual cleansing liquids by means of compressed air.

The dummy bottle 2 is associated permanently with the body of the filler valve by way of a sleeve 5, performing the function of a guide, which ensheathes a column 6 forming part of a frame that is axially slidable in relation to the valve.

21 denotes one of a plurality of pins exhibited by the bottling machine (see fig 4), which, with the carousel structure of the machine revolving in the direction of the arrow marked 22, are designed to strike the corresponding dummy bottle 2, causing it to rotate about its column 6 and move into coaxial alignment with the outlet 9 of the filler valve; thereafter, the dummy bottle 2 will be raised to the outlet by means of a hook element 8 (the same as that by which production bottles are raised in normal operation).

The dummy bottle is also connected rigidly to an arm 4 designed to interact with a pin 19 (fig 8); with the carousel revolving and the flushing operation terminated, the pin 19 strikes against the arm 4, causing the dummy bottle to rotate about the column 6 in the direction opposite to that first mentioned and return into coaxial alignment with the support cylinder 3.

Figs 3, 4, 5, 6, 7 and 8 illustrate the various configurations of the dummy bottle and the means by which it is associated permanently with the valve, in passing to the position assumed in readiness for the start of the sanitizing operation.

In operation of the bottling equipment, when the need arises to effect a sanitizing cycle, the cam

1 is actuated automatically by the shoe 20 to release the dummy bottle 2, which descends along its own axis and is struck by the pin denoted 21, thereupon rotating about the relative column 6 into alignment with the valve; the hook element 8 then operates to raise the dummy bottle up to the outlet 9, against which it registers hermetically in the manner of a production bottle.

Once the various steps of the sanitizing cycle have been completed, the dummy bottle will be returned to its stowed position automatically by a reversal of the steps described in the foregoing, remaining permanently associated with the valve; accordingly, one has the advantage that no manual operations are required whatever, either to position the dummy bottles in readiness for the sanitizing cycle or to remove them from the machine on completion of the cycle.

struck, and the dummy bottle (2) caused to rotate about the supporting column (6) in the direction opposite to that which achieves coaxial alignment with the valve, in order to regain the position of coaxial alignment with the cylinder (3).

### Claims

1) A filler valve for bottling equipment, of the type incorporating means by which to support a dummy bottle, comprising a frame associated with and axially slidable in relation to the body of the valve and designed to raise a bottle toward the valve outlet by way of a hook element (8), characterized

in that it incorporates both the means by which to support a dummy bottle (2), and the dummy bottle itself.

2) A filler valve as in claim 1, wherein the dummy bottle (2) is disposed parallel to the axis of the valve and rotatable about a supporting column (6) toward a position of coaxial alignment with the valve, on arrival at which it is raised up toward the valve by the hook element (8) in the manner of a filling bottle.

3) A filler valve as in preceding claims, comprising a cam (1) operated by a shoe (20) and serving to release the dummy bottle from a stowed position.

4) A filler valve as in preceding claims, wherein means by which to support a dummy bottle comprise:

- a cylinder (3) integral with the valve body;
- a sleeve (5) serving to guide the movements of the dummy bottle;
- an arm (4) integral with the dummy bottle, serving to position the bottle in coaxial alignment with the filler valve.

5) A filler valve as in preceding claims, positioned to interact with a pin (21) by which the dummy bottle (2) is struck and caused to rotate about the supporting column (6) into the position of coaxial alignment with the valve.

6) A filler valve as in preceding claims, positioned to interact with a pin (19) by which the arm (4) is

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FIG1

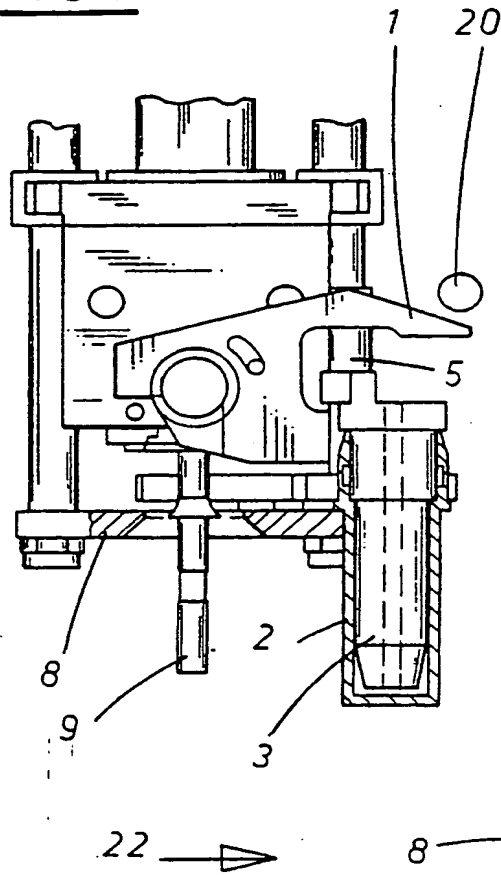


FIG3

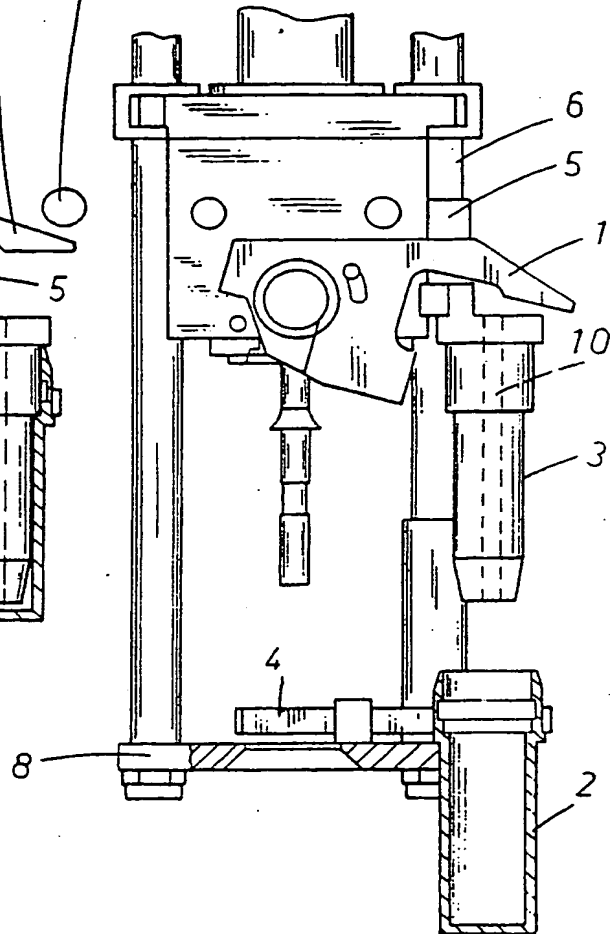


FIG2

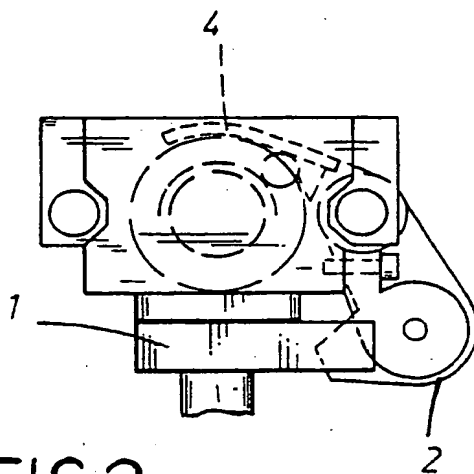


FIG 4

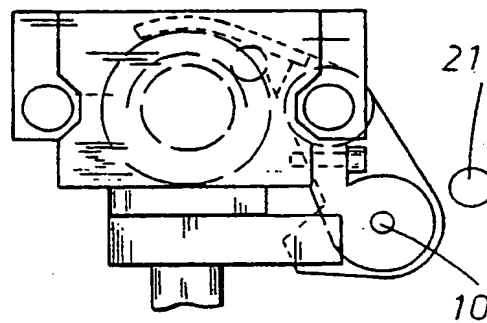


FIG 5

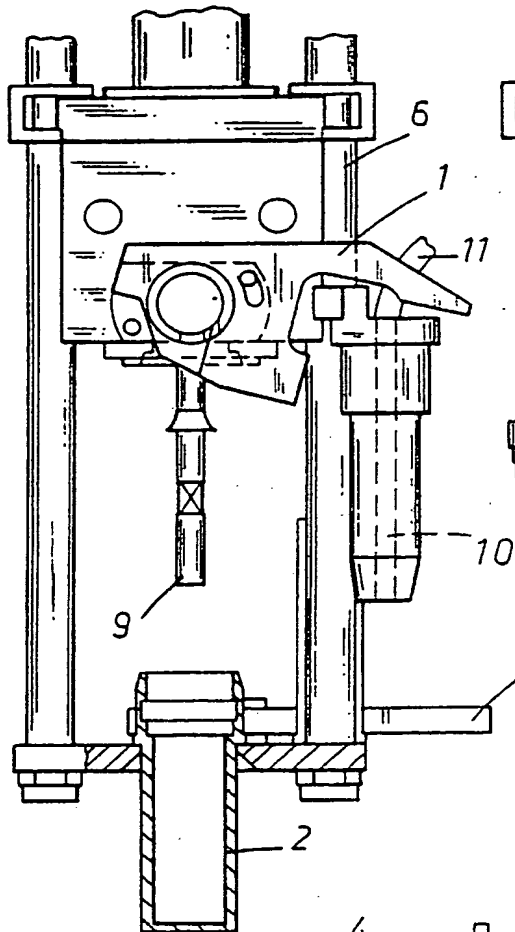


FIG 7

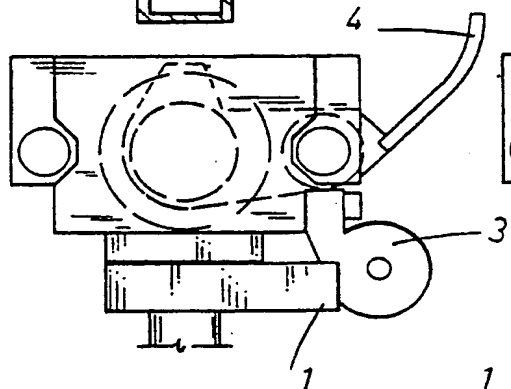
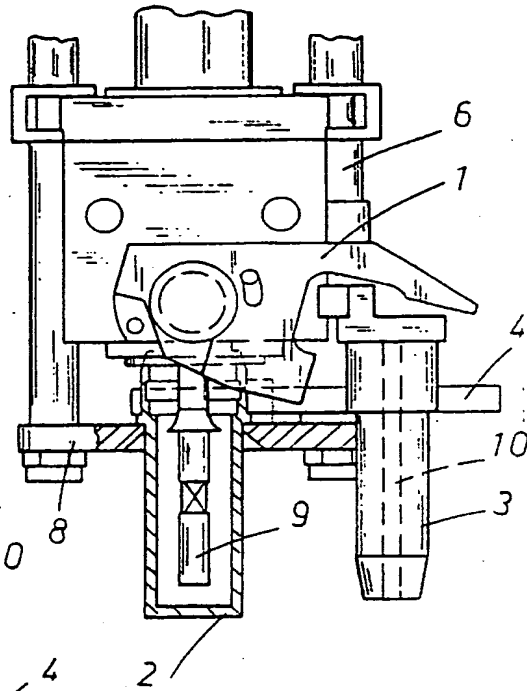


FIG 6

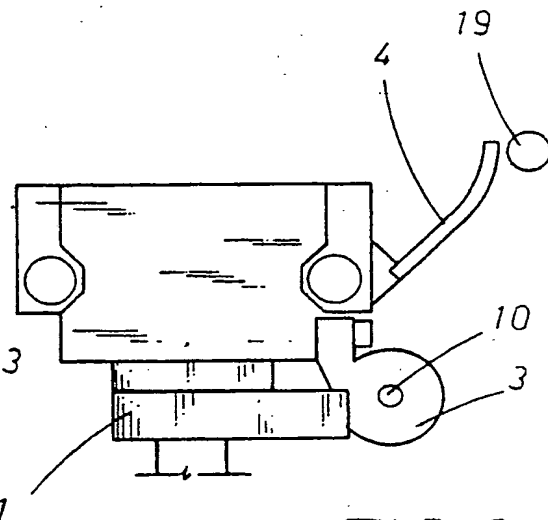


FIG 8



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# EUROPEAN SEARCH REPORT

Application Number

EP 90 83 0224

| DOCUMENTS CONSIDERED TO BE RELEVANT   |   |  |   |
|---|---|--|---|
| Category  | Citation of document with indication, where appropriate, of relevant passages                 | Relevant to claim  | CLASSIFICATION OF THE APPLICATION (Int. CL.5) |
| X   | DE-A-3 722 495 (HOLSTEIN UND KAPPERT)<br>* Whole document *                                   | 1  | B 67 C 3/00                                   |
| Y   | ---   | 2,5  |   |
| Y   | DE-A-2 804 423 (ORTMANN & HERBST)<br>* Page 10 - page 11, paragraph 1;<br>figure *            | 2,5  |   |
| A   | FR-A-2 292 661 (SHIBUYA KOGYO)<br>* Page 7, line 24 - page 8, line 33;<br>figure 2 *<br>----- | 1  |   |
|   |   |  | TECHNICAL FIELDS<br>SEARCHED (Int. CL.5)      |
|   |   |  | B 67 C<br>B 65 B                              |
| The present search report has been drawn up for all claims  |   |  |   |
| Place of search<br>THE HAGUE  |   | Date of completion of the search<br>07-09-1990   | Examiner<br>SCHELLE, J.                       |
| CATEGORY OF CITED DOCUMENTS   |   |  |   |
| X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document |   | I : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |   |